

ABSTRACT OF THE DISCLOSURE

A system and method for removing a by-product from a chemical hydride solution is disclosed. The method includes the steps of: (a) withdrawing the chemical hydride solution at a first temperature from the reactor; (b) cooling the chemical hydride solution to a second temperature below the first temperature, wherein a precipitate is formed from a portion of the by-product; (c) removing the precipitate from the chemical hydride solution; (d) heating the chemical hydride solution to a third temperature above the second temperature, to dissolve the remaining precipitate; and (e) delivering the chemical hydride solution back to the reactor. The system is a circuit which includes: (a) a hydrogen reactor; (b) a pump for withdrawing the chemical hydride solution from the reactor and returning the chemical hydride solution to the reactor; (c) a cooling element for cooling the chemical hydride solution to a second temperature below the first temperature; (d) a separator for removing the precipitate from the chemical hydride solution; and (e) a heater for heating the chemical hydride solution to a third temperature.